OhioEPA
State of Ohio Environmental Protection Agency

DIVISION OF SURFACE WATER

Antidegradation Addendum

In accordance with Ohio Administrative Code 3745-1-05 (Antidegradation), additional information may be required to complete your application for a permit to install or NPDES permit. For any application that may result in an increase in the level of pollutants being discharged (NPDES and/or PTI)or for which there might be activity taking place within a stream bed, the processing of the permit(s) may be required to go through procedures as outlined in the antidegradation rule. The rule outlines procedures for public notification and participation as well as procedures pertaining to the levels of review necessary. The levels of review necessary depend on the degradation being considered/requested. The rule also outlines exclusions from portions of the application and review requirements and waivers that the Director may grant as specified in Section 3745-1-05(D) of the rule. Please complete the following questions. The answers provided will allow the Ohio EPA to determine if additional information is needed. **All projects that require both an NPDES and PTI should submit both applications simultaneously to avoid going through the antidegradation process separately for each permit**.

A. **Applicant:** American Energy Corporation

Facility Owner: American Energy Corporation

Facility Location (city and county): 43521 Mayhugh Hill Road

Application or Plans Prepared By: Vaughn, Coast & Vaughn, Inc.

Project Name: Bennoc Area Coarse Coal Refuse Disposal

NPDES Permit Number (if applicable): NA

B. **Antidegradation Applicability**

Is the application for? (check as many as apply):

X Application with no direct surface water discharge (Projects that do not meet the applicability section of 3745-1-05(B)1, i.e., on-site disposal, extensions of sanitary sewers, spray irrigation, indirect discharger to POTW, etc.). (Complete Section E)

____ Renewal NPDES application or PTI application with no requested increase in loading of currently permitted pollutants. (Complete Section E, Do not complete Sections C or D).

____ PTI and NPDES application for a new wastewater treatment works that will discharge to a surface water. (Complete Sections C and E)

____ An expansion/modification of an existing wastewater treatment works discharging to a surface water that will result in any of the following (PTI and NPDES):(Complete Sections C and E)

- addition of any pollutant not currently in the discharge, or
- an increase in mass or concentration of any pollutant currently in the discharge, or
- an increase in any current pollutant limitation in terms of mass or concentration.

Click to clear all entered information (on all 4 pages of this form) CLEAR

_____ PTI that involves placement of fill or installation of any portion of a sewerage system (i.e., sanitary sewers, pump stations, WWTP, etc.)within 150 feet of a stream bed. Please provide information requested on the stream evaluation addendum (i.e., number of stream crossings, fill placement, etc.) and complete Section E.

_____ Initial NPDES permit for an existing treatment works with a wastewater discharge prior to October 1, 1996. (Complete Sections D and E)

X Renewal NPDES permit or modification to an effective NPDES permit that will result in any of the following:(Complete Sections C and E)

- a new permit limitation for a pollutant that previously had no limitation, or
- an increase in any mass or concentration limitation of any pollutant that currently has a limitation.

decided to issue separate NPDES BG

C. Antidegradation Information

1. Does the PTI and/or NPDES permit application meet an exclusion as outlined by OAC 3745-1-05(D)(1) of the Antidegradation rule?

_____ Yes (Complete Question C.2)

__X__ No (Complete Questions C.3 and C.4)

2. For projects that would be eligible for exclusions provide the following information:

   a. Provide justification for the exclusion.

   b. Identify the substances to be discharged, including the amount of regulated pollutants to be discharged in terms of mass and concentration.

   c. A description of any construction work, fill or other structures to occur or be placed in or near a stream bed.

3. Are you requesting a waiver as outlined by OAC 3745-1-05(D)(2-7) of the Antidegradation rule?

__X__ No

_____ Yes

   If you wish to pursue one of the waivers, please identify the waiver and submit the necessary information to support the request. Depending on the waiver requested, the information required under question C.4 may be required to complete the application.

4. For all projects that do **not** qualify for an exclusion a report must accompany this application evaluating the preferred design alternative, non-degradation alternatives, minimal degradation alternatives, and mitigative techniques/measures for the design and operation of the activity. The information outlined below should be addressed in this report. If a waiver is requested, this section is still required.

   a. Describe the availability, cost effectiveness and technical feasibility of connecting to existing central or regional sewage collection and treatment facilities, including long range plans for

sewer service outlined in state or local water quality management planning documents and applicable facility planning documents.

b. List and describe all government and/or privately sponsored conservation projects that may have been or will be specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource.

c. Provide a brief description below of all treatment/disposal alternatives evaluated for this application and their respective operational and maintenance needs. (If additional space is needed please attach additional sheets to the end of this addendum).

Preferred design alternative:

See Attached.

Non-degradation alternative(s):

See Attached.

Minimal degradation alternative(s):

See Attached.

Mitigative technique/measure(s):

See Attached.

At a minimum, the following information must be included in the report for each alternative evaluated.

d. Outline of the treatment/disposal system evaluated, including the costs associated with the equipment, installation, and continued operation and maintenance.

e. Identify the substances to be discharged, including the amount of regulated pollutants to be discharged in terms of mass and concentration.

f. Describe the reliability of the treatment/disposal system, including but not limited to the possibility of recurring operation and maintenance difficulties that would lead to increased degradation.

g. Describe any impacts to human health and the overall quality and value of the water resource.

h. Describe and provide an estimate of the important social and economic benefits to be realized through this proposed project. Include the number and types of jobs created and tax revenues generated.

i. Describe environmental benefits to be realized through this proposed project.

j. Describe and provide an estimate of the social and economic benefits that may be lost as a result of this project. Include the impacts on commercial and recreational use of the water resource.

k. Describe the environmental benefits lost as a result of this project. Include the impact on the aquatic life, wildlife, threatened or endangered species.

l. A description of any construction work, fill or other structures to occur or be placed in or near a stream bed.

m. Provide any other information that may be useful in evaluating this application.

D. Discharge Information

1. For treatment/disposal systems constructed pursuant to a previously issued Ohio EPA PTI, provide the following information:

PTI Number _____
PTI Issuance Date _____
Initial Date of Discharge _____

2. Has the appropriate NPDES permit application form been submitted including representative effluent data?

_____ Yes (go to E)

_____ No (see below)

If no, submit the information as applicable under **a OR b** as follows:

a. For entities discharging process wastewater attach a completed 2C form.

b. For entities discharging wastewater of domestic origin attach the results of at least one chemical analysis of the wastestream for all pollutants for which authorization to discharge is being requested and a measurement of the daily volume (gallons per day) of wastewaters being discharged.

E. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete.

This section must be signed by the same responsible person who signed the accompanying permit application or certification as per 40 CFR 122.22.

Signature _____ TREASURER

Date 5/21/12

American Energy Corporation
Century Mine
Bennoc Area Coarse Coal Refuse Disposal
Antidegradation Addendum Attachment
Application for Individual NPDES Application for Discharge for Ponds 001 and 002
May 17, 2012

Background

Ponds 001 and 002 receive runoff from tributary areas that are currently not receiving coarse coal refuse. The outfalls from these ponds are currently under a General Construction Permit OGM00449*BG. This application proposes to move coverage of these outfalls to an individual NPDES Permit. The reason for this change is that AEC has applied to the ODNR for a change in permit coverage allowing for the disposal of coarse coal refuse in areas tributary to these outfalls.

Summary

A anti-degradation assessment of the impact of the discharges of Ponds 001 and 002 on the water quality of Piney Creek was completed (*Hydro-Chemical Analysis of Waste Water Discharge and Anti-Degradation Assessment: American Energy Corporation's Bennoc Coarse Coal Refuse Area Ponds 001 and 002, William J. Walker, PhD, Sovereign Consulting, Inc., May 11, 2012).* Currently, there is no coarse coal refuse being disposed in the drainage area tributary to these ponds. Representative water quality data was obtained from in pond sampling locations within Pond 013 on the property, which currently receives runoff from coarse coal refuse. This data along with Piney Creek stream flows and water quality data were used in the Ohio EPA's Waste Load Allocation model to determine the expected maximum concentrations of specific constituents in the pond discharges that will not exceed allowable water quality standards. Based on the analysis of the discharges of Ponds 001 and 002, it was determined that degradation of Piney Creek will not occur. The Preferred Alternative for discharge of water from Ponds 001 and 002 is to enlarge the ponds and to continue to manage the ponds to allow settling, aeration, and other geochemical reactions to occur; to increase retention time to further optimize settling and the various reactions in the ponds by installing pond partitions; and to adjust the pH if needed.

The underlying concept used in the Ohio EPA's Waste Load Allocation model for mixing of each pond's discharge with the receiving water should be discussed further. The concept makes sense for industrial processes that discharge continuously regardless of ambient meteoric conditions; however, it does not make sense for situations where discharging water body flows and receiving water body flows are both dependent on the same environmental conditions. For example, the 7Q10 stream flow is used to be protective of aquatic life when discharge occurs during low flow. However, the Bennoc ponds will also be low during the Piney Creek low flow conditions because it receives water exclusively from runoff, much like the receiving water body. Therefore, it will not discharge during these very sensitive low flow conditions. Currently, there is no mechanism in which these observations are accounted for in the permit process.

Additionally, the model currently uses a default value of 20% for the volume of receiving water available for mixing. Because the ratio of 7Q10 low flow to pond effluent average design flow is relatively low (about 3), it is reasonable to assume that a higher percentage of stream mixing volume could be used in the model calculations. Based on this assumption, it is expected that the allowable levels for pond discharge could increase as well.

Therefore, based on this observation and each pond's intermittent discharge characteristic due to runoff, further discussion about appropriate mixing values is warranted and necessary.

C.4.a. Describe the availability, cost effectiveness and technical feasibility of connecting to existing central or regional sewage collection and treatment facilities, including long range plans for sewer services outlined in state or local water quality management planning documents and applicable facility planning documents.

Not applicable.

C.4.b. List and describe all government and/or privately sponsored conservation projects that may have been or will be specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource.

There are no known conservation projects to improve water quality in the streams affected by these outfalls.

C.4.c. Provide a brief description below of all treatment/disposal alternatives evaluated for this application and their respective operational and maintenance needs.

1. Preferred design alternative: Enlarged ponds with pond partitions for maximizing retention time and in-pond geochemical metals reductions followed by separate direct discharges to Piney Creek.

2. Non-degradation alternative: No alternative is recommended because the Preferred Design Alternative does not degrade Piney Creek.

3. Minimal degradation alternative: No alternative is recommended because the Preferred Design Alternative does not degrade Piney Creek.

4. Mitigative technique/measures: As coal refuse is being disposed in the areas which drain to these ponds, ODNR land management requirements would be employed as much as possible. These requirements include but are limited to maintaining the spoil materials by proper grading, ditching, soil covering, and revegetation as soon as practical to reduce runoff from coal refuse to the ponds.

C.4. Preferred Design Alternative:
Enlarged ponds with pond partitions for maximizing detention time and in-pond geochemical metals reductions followed by separate direct discharges to Piney Creek.

C.4.d. Outline of the treatment/disposal system evaluated, including the costs associated with the equipment, installation, and continued operation and maintenance.

For the preferred design alternative, the ponds would be enlarged and pond partitions would be installed in the two ponds to maximize retention time through the pond to allow aeration to occur and to maximize in-pond geochemical metals reductions to occur. The discharge would continue as it currently does with the pond effluent passing in an open ditch to Piney Creek. The ponds will discharge due to precipitation events generating runoff to the ponds. The partitions would be hanging curtain type similar to those used in sewage lagoons, supported by cables. In addition to partitions, a flow based chemical introduction system would be installed at the inlet of each pond to regulate chemical addition based on inlet flow. This system will continually receive a portion of inlet flow which then distributes a regulated quantity of

chemical to the pond(s) based on intensity of inlet flow. This system is used as an environmental control to regulate water quality throughout dry conditions and precipitation events. The enlargement of the ponds, installation of partitions, and treatment systems cost are estimated to be $369,000.

When the Individual NPDES permit is issued for the pond outfalls, it is expected that sampling and reporting activity will increase compared to the previous Construction General Permit that is currently in place. The staffing is expected to remain the same; however, the manhours and outsourced laboratory expenses necessary to comply with the reporting aspects of the new permit tables will increase.

C.4.e. Identify the substances to be discharged, including the amount of regulated pollutants to be discharged in terms of mass and concentration.

	Pond 001	Pond 002
Flow	40,000 gpd	25,000 gpd
pH	7.9	7.9
Specific Conductance	4,239 mg/L	4,239 mg/L
TSS	11	11 mg/L
Fe	0.479 mg/L	0.479 mg/L
Mn	0.377 mg/L	0.377 mg/L

C.4.f. Describe the reliability of the treatment/disposal system, including but not limited to the possibility of recurring operation and maintenance difficulties that would lead to increased degradation.

This alternative employs no discharge controls and it will discharge similar to what it currently does. The current arrangement is very reliable and does not require significant amounts of operation and maintenance. Each pond needs to be checked for siltation to ensure it does not lose its effectiveness as a settling pond. The partition cabling and partitions need to be inspected annually to ensure their structural integrity.

C.4.g. Describe any impacts to human health and the overall quality and value of the water resource.

There are no known impacts to human health from the continued discharge of runoff water from these ponds.

Piney Creek receives the pond discharges and discharges to the main stream, Captina Creek, which has maintained as an exceptional quality stream.

C.4.h. Describe and provide an estimate of the important social and economic benefits to be realized through this proposed project. Include the number and types of jobs created and tax revenues generated.

This permit will allow discharges to occur from Ponds 001 and 002 that will be receiving runoff from coarse coal refuse generated from the construction of a second slope, longwall and preparation plant at the Century Mine. This second mine operation will create an increase in the number of both surface and underground jobs at the Century Mine. In 2011, the total number of employees at this mine included 227 salaried employees and 458 hourly employees for a total of 685 employees. The 2011 payroll generated was $53,600,000 with an associated $3,500,000 in Ohio state taxes paid and $13,500,000 in Federal taxes

paid. Projected capital improvements in 2012 for the second slope, longwall, and preparation plant construction will approach $113,000,000. It is estimated that the mine operation will grow with a peak payroll of $73,000,000 in 2015. Additionally, AEC alone purchased some $94,885,000 in supplies in 2011 to support mining operations. The local economy benefits significantly from the operation of this mine through direct jobs generated and through indirect jobs created/sustained by businesses serving this industry.

C.4.i. Describe environmental benefits to be realized through this proposed project.

Runoff from the mine will be controlled and discharged in an improved quality versus no controls in place.

C.4.j. Describe and provide an estimate of the social and economic benefits that may be lost as a result of this project. Include the impacts on commercial and recreational use of the water resource.

There will be no social and economic benefits lost from this project. If the project does not proceed forward, there will be a significant loss of social and economic benefits to the local economy from the mining jobs being eliminated.

There will be no detrimental impact on commercial and recreational use of the streams impacted by the two pond outfalls. The streams have been receiving discharges from these ponds for many years and are acclimated to the water quality of these discharges. Captina Creek is an exceptional quality stream and maintains that reputation.

C.4.k. Describe the environmental benefits lost as a result of this project. Include the impact on the aquatic life, wildlife, threatened or endangered species.

No change in overall water quality in Piney Creek and Captina Creek from the pond discharges is anticipated. Wildlife in general has continued to flourish in rural areas such as this area in present times. There are no known environmental benefits lost from the proposed project.

C.4.l. A description of any construction work, fill or other structures to occur or be placed in or near a stream bed.

No facilities are proposed to be placed in a waterway.

C.4.m. Provide any other information that may be useful in evaluating this application.

No additional information is presented.

C.4. Non-Degradation Alternative:

No non-degradation alternative is recommended because the Preferred Design Alternative does not degrade Piney Creek.

C.4. Minimal Degradation Alternative:

No minimal degradation alternative is recommended because the Preferred Design Alternative does not degrade Piney Creek.